

CLAIMS:

1. A method for allowing a server node in a virtual private network to have a single tunnel definition and a single security policy for a plurality of tunnels associated with a group name comprising the steps of:

configuring a group database in said server node, wherein said group database in said server node comprises said group name and a list of members associated with said group name; and

configuring a rules database in said server node, wherein said rules database associates said group name with a particular security policy, wherein said server node has a single security policy for each of the plurality of tunnels associated with said group name.

2. The method as recited in claim 1 further comprising the step of:

configuring a tunnel definition database in said server node, wherein a remote ID in said tunnel definition is defined as said group name, wherein said server node has a single tunnel definition for each of the plurality of tunnels associated with said group name.

3. The method as recited in claim 2 further comprising the step of:

activating a particular tunnel of said plurality of tunnels associated with said group name, wherein said particular tunnel is associated with a particular member of said group name.

4. The method as recited in claim 3 further comprising the step of:
transferring data across said particular tunnel.

1 5. The method as recited in claim 1, wherein said list of members associated with
2 said group name comprise an ID type and an ID of each member associated with said
3 group name.

1 6. The method as recited in claim 5, wherein said ID type is an Internet Key
2 Exchange (IKE) defined ID type, wherein said list of members is a non-contiguous list
3 of IKE defined ID types.

1 7. The method as recited in claim 5, wherein said ID is a login ID.

1 8. The method as recited in claim 5, wherein said ID is a specified name.

1 9. The method as recited in claim 2, wherein configuring said tunnel definition
2 database in said server node comprises establishing said server node and a client node
3 as the two end points of a particular tunnel.

1 10. The method as recited in claim 9, wherein said tunnel definition database in said
2 server node is configured by a user entering a local ID, a local ID type, said remote ID
3 and a remote ID type through a GUI.

1 11. The method as recited in claim 9, wherein said tunnel definition database in said
2 server node is configured by a user entering a local ID, a local ID type, said remote ID
3 and a remote ID type through a command line interface.

1 12. The method as recited in claim 1, wherein said group database in said server node
2 comprises said group name and an ID type of each member of said group name and an
3 ID of each member of said group name.

1 13. The method as recited in claim 12, wherein configuring said group database in
2 said server node is accomplished by entering said group name, said ID type of each
3 member of said group name and said ID of each member of said group name through a
4 GUI.

1 14. The method as recited in claim 12, wherein configuring said group database in
2 said server node is accomplished by entering said group name, said ID type of each
3 member of said group name and said ID of each member of said group name through a
4 command line interface.

1 15. The method as recited in claim 12, wherein configuring said group database in
2 said server node is accomplished by entering said group name, said ID type of each
3 member of said group name and said ID of each member of said group name through
4 configuration files.

1 16. The method as recited in claim 1, wherein said rules database in said server node
2 comprises said group name, a group name ID type and a security policy pointer.

1 17. The method as recited in claim 16, wherein configuring said rules database in said
2 server node is accomplished by entering said group name, said group name ID type and
3 said security policy pointer through a GUI.

1 18. The method as recited in claim 16, wherein configuring said rules database in said
2 server node is accomplished by entering said group name, said group name ID type and
3 said security policy pointer through a command line interface.

1 19. The method as recited in claim 3, wherein activating said particular tunnel
2 comprises the steps of:

3 sending a security policy stored in a policy database of a client node by said client
4 node to said server node;

5 sending a security policy stored in a policy database of said server node by said
6 server node to said client node if said security policy stored in said policy database of
7 said server node matches said security policy stored in said policy database of said client
8 node;

9 sending a first nonce by said client node to said server node;

10 sending a second nonce by said server node to said client node;

11 sending a first ID by said client node to said server node; and

12 sending a second ID by said server node to said client node.

1 20. The method as recited in claim 19, wherein said first and second nonce are used
2 to generate key material for said server and client node, respectively.

1 21. The method as recited in claim 19, wherein said policy database in said client and
2 server node are configured by entering said security policy through a GUI at said client
3 and server node.

1 22. The method as recited in claim 19, wherein said policy database in said client and
2 server node are configured by entering said security policy through a command line
3 interface at said client and server node.

1 23. The method as recited in claim 19, wherein said first ID is an ID of said particular
2 member of said group name.

1 24. The method as recited in claim 3, wherein activating said particular tunnel
2 comprises the steps of:

3 sending a security policy stored in a policy database of a client node by said client
4 node to said server node;

5 sending a security policy stored in a policy database of said server node by said
6 server node to said client node if said security policy stored in said policy database of
7 said server node agrees on the same set of protection suites at any point in time with said
8 security policy stored in said policy database of said client node;

9 sending a first nonce by said client node to said server node;

10 sending a second nonce by said server node to said client node;

11 sending a first ID by said client node to said server node; and

12 sending a second ID by said server node to said client node.

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1 25. A network system comprising:
2 a plurality of tunnels associated with a group name, wherein each of said plurality
3 of tunnels associated with said group name comprises a plurality of nodes, wherein each
4 of said plurality of nodes comprises a communication adapter to interconnect with said
5 virtual private network, wherein one of said plurality of nodes is a server node, wherein
6 one of said plurality of nodes is a client node, wherein said server node comprises:

7 a group database, wherein said group database comprises said group name
8 and a list of members associated with said group name; and

9 a rules database, wherein said rules database associates said group name
10 with a particular security policy, wherein said server node has a single security policy for
11 each of the plurality of tunnels associated with said group name.

1 26. The network system as recited in claim 25, wherein said server node further
2 comprises:

3 a tunnel definition database, wherein a remote ID in said tunnel definition is
4 defined as said group name, wherein said server node has a single tunnel definition for
5 each of the plurality of tunnels associated with said group name.

1 27. The network system as recited in claim 26, wherein a particular tunnel of said
2 plurality of tunnels associated with said group name is activated, wherein said particular
3 tunnel is associated with a particular member of said group name.

1 28. The network system as recited in claim 25, wherein said list of members
2 associated with said group name comprise an ID type and an ID of each member
3 associated with said group name.

1 29. The network system as recited in claim 28, wherein said ID type is an Internet
2 Key Exchange (IKE) defined ID type, wherein said list of members is a non-contiguous
3 list of IKE defined ID types.

1 30. The network system as recited in claim 28, wherein said ID is a login ID.

1 31. The network system as recited in claim 28, wherein said ID is a specified name.

1 32. The network system as recited in claim 26, wherein said tunnel definition
2 database in said server node is configured by a user entering a local ID, a local ID type,
3 said remote ID and a remote ID type through a GUI.

1 33. The network system as recited in claim 26, wherein said tunnel definition
2 database in said server node is configured by a user entering a local ID, a local ID type,
3 said remote ID and a remote ID type through a command line interface.

1 34. The network system as recited in claim 25, wherein said group database in said
2 server node comprises said group name and an ID type of each member of said group
3 name and an ID of each member of said group name.

1 35. The network system as recited in claim 34, wherein said group database in said
2 server node is configured by a user entering said group name, said ID type of each
3 member of said group name and said ID of each member of said group name through a
4 GUI.

1 36. The network system as recited in claim 34, wherein said group database in said
2 server node is configured by a user entering said group name, said ID type of each

3 member of said group name and said ID of each member of said group name through a
4 command line interface.

1 37. The network system as recited in claim 34, wherein said group database in said
2 server node is configured by a user entering said group name, said ID type of each
3 member of said group name and said ID of each member of said group name through
4 configuration files.

1 38. The network system as recited in claim 25, wherein said rules database in said
2 server node comprises said group name, a group name ID type and a security policy
3 pointer.
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1 39. The network system as recited in claim 38, wherein said rules database is
2 configured by a user entering said group name, said group name ID type and said security
3 policy pointer through a GUI.

1 40. The network system as recited in claim 39, wherein said rules database is
2 configured by a user entering said group name, said group name ID type and said security
3 policy pointer through a command line interface.

1 41. The network system as recited in claim 27, wherein activating said particular
2 tunnel comprises the steps of:

3 sending a security policy stored in a policy database of said client node by said
4 client node to said server node;

5 sending a security policy stored in a policy database of said server node by said
6 server node to said client node if said security policy stored in said policy database of
7 said server node matches said security policy stored in said policy database of said client
8 node;

9 sending a first nonce by said client node to said server node;
 10 sending a second nonce by said server node to said client node;
 11 sending a first ID by said client node to said server node; and
 12 sending a second ID by said server node to said client node.

1 42. The network system as recited in claim 41, wherein said first and second nonce
 2 are used to generate key material for said server and client node, respectively.

1 43. The network system as recited in claim 41, wherein said policy database in said
 2 client and server node are configured by entering said security policy through a GUI at
 3 said client and server node.

1 44. The network system as recited in claim 41, wherein said policy database in said
 2 client and server node are configured by entering said security policy through a command
 3 line interface at said client and server node.

1 45. The network system as recited in claim 41, wherein said first ID is an ID of said
 2 particular member of said group name.

1 46. The network system as recited in claim 27, wherein activating said particular
 2 tunnel comprises the steps of:

3 sending a security policy stored in a policy database of said client node by said
 4 client node to said server node;

5 sending a security policy stored in a policy database of said server node by said
 6 server node to said client node if said security policy stored in said policy database of
 7 said server node agrees on the same set of protection suites at any point in time with said
 8 security policy stored in said policy database of said client node;

9 sending a first nonce by said client node to said server node;

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sending a second notice by said server node to said client node;
sending a first ID by said client node to said server node; and
sending a second ID by said server node to said client node.

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1 47. A computer program product having a computer readable medium having
2 computer program logic recorded thereon for allowing a server node in a virtual private
3 network to have a single tunnel definition and a single security policy for a plurality of
4 tunnels associated with a group name, comprising:

5 programming operable for configuring a group database in said server node,
6 wherein said group database in said server node comprises said group name and a list of
7 members associated with said group name; and

8 programming operable for configuring a rules database in said server node,
9 wherein said rules database associates said group name with a particular security policy,
10 wherein said server node has a single security policy for each of the plurality of tunnels
11 associated with said group name.

1 48. The computer program product as recited in claim 47 further comprises:

2 programming operable for configuring a tunnel definition database in said server
3 node, wherein a remote ID in said tunnel definition is defined as said group name,
4 wherein said server node has a single tunnel definition for each of the plurality of tunnels
5 associated with said group name.

1 49. The computer program product as recited in claim 48 further comprises:

2 programming operable for activating a particular tunnel of said plurality of
3 tunnels associated with said group name, wherein said particular tunnel is associated with
4 a particular member of said group name.

1 50. The computer program product as recited in claim 49 further comprises:

2 programming operable for transferring data across said particular tunnel.

1 51. The computer program product as recited in claim 47, wherein said list of
2 members associated with said group name comprise an ID type and an ID of each
3 member associated with said group name.

1 52. The computer program product as recited in claim 51, wherein said ID type is an
2 Internet Key Exchange (IKE) defined ID type, wherein said list of members is a
3 non-contiguous list of IKE defined ID types.

1 53. The computer program product as recited in claim 51, wherein said ID is a login
2 ID.

1 54. The computer program product as recited in claim 51, wherein said ID is a
2 specified name.

1 55. The computer program product as recited in claim 48, wherein configuring said
2 tunnel definition database in said server node comprises establishing said server node and
3 a client node as the two end points of a particular tunnel.

1 56. The computer program product as recited in claim 55, wherein said tunnel
2 definition database in said server node is configured by a user entering a local ID, a local
3 ID type, said remote ID and a remote ID type through a GUI.

1 57. The computer program product as recited in claim 55, wherein said tunnel
2 definition database in said server node is configured by a user entering a local ID, a local
3 ID type, said remote ID and a remote ID type through a command line interface.

1 58. The computer program product as recited in claim 47, wherein said group
2 database in said server node comprises said group name and an ID type of each member
3 of said group name and an ID of each member of said group name.

1 59. The computer program product as recited in claim 58, wherein configuring said
2 group database in said server node is accomplished by entering said group name, said ID
3 type of each member of said group name and said ID of each member of said group name
4 through a GUI.

1 60. The computer program product as recited in claim 58, wherein configuring said
2 group database in said server node is accomplished by entering said group name, said ID
3 type of each member of said group name and said ID of each member of said group name
4 through a command line interface.

1 61. The computer program product as recited in claim 58, wherein configuring said
2 group database in said server node is accomplished by entering said group name, said ID
3 type of each member of said group name and said ID of each member of said group name
4 through configuration files.

1 62. The computer program product as recited in claim 47, wherein said rules database
2 in said server node comprises said group name, a group name ID type and a security
3 policy pointer.

1 63. The computer program product as recited in claim 62, wherein configuring said
2 rules database in said server node is accomplished by entering said group name, said
3 group name ID type and said security policy pointer through a GUI.

1 64. The computer program product as recited in claim 62, wherein configuring said
2 rules database in said server node is accomplished by entering said group name, said
3 group name ID type and said security policy pointer through a command line interface.

1 65. The computer program product as recited in claim 49, wherein activating said
2 particular tunnel comprises the steps of:

3 sending a security policy stored in a policy database of a client node by said client
4 node to said server node;

5 sending a security policy stored in a policy database of said server node by said
6 server node to said client node if said security policy stored in said policy database of
7 said server node matches said security policy stored in said policy database of said client
8 node;

9 sending a first nonce by said client node to said server node;

10 sending a second nonce by said server node to said client node;

11 sending a first ID by said client node to said server node; and

12 sending a second ID by said server node to said client node.

1 66. The computer program product as recited in claim 65, wherein said first and
2 second nonce are used to generate key material for said server and client node,
3 respectively.

1 67. The computer program product as recited in claim 65, wherein said policy
2 database in said client and server node are configured by entering said security policy
3 through a GUI at said client and server node.

1 68. The computer program product as recited in claim 65, wherein said policy
2 database in said client and server node are configured by entering said security policy
3 through a command line interface at said client and server node.

1 69. The computer program product as recited in claim 65, wherein said first ID is an
2 ID of said particular member of said group name.

1 70. The computer program product as recited in claim 49, wherein activating said
2 particular tunnel comprises the steps of:

3 sending a security policy stored in a policy database of a client node by said client
4 node to said server node;

5 sending a security policy stored in a policy database of said server node by said
6 server node to said client node if said security policy stored in said policy database of
7 said server node agrees on the same set of protection suites at any point in time with said
8 security policy stored in said policy database of said client node;

9 sending a first nonce by said client node to said server node;

10 sending a second nonce by said server node to said client node;

11 sending a first ID by said client node to said server node; and

12 sending a second ID by said server node to said client node.